

IN THE CLAIMS

1. (currently amended)

A pressure sensor device for producing a signal indicative of a pressure of a fluid to be monitored, comprising:

a housing having a fluid conduit for receiving the fluid to be monitored;

a diaphragm positioned at an end of the fluid conduit and including at least first and second portions, wherein a thickness of the first portion is less than a thickness of the second portion; and

a transducer bonded to a surface of the first portion of the diaphragm to measure deformation of said first portion and including piezoresistive elements, said transducer including electronics for sending and processing said signal.

2. (original)

The device of claim 1, wherein said transducer is a MEMS pressure transducer.

3. (original)

The device of claim 2, wherein said diaphragm is a stainless steel diaphragm and said MEMS pressure transducer is mounted to said diaphragm by a high temperature bonding process.

4. (original)

The device of claim 1, wherein said housing is cylindrical.

5. (original)

The device of claim 1, wherein said second portion is circular and said first portion is annular around the outer edge of said second portion.

6. (original)

The device of claim 1, wherein said housing is tubular and said first end includes an annular shoulder for mounting said diaphragm thereon.

7. (original)

The device of claim 6, which further includes an annular groove on the outer surface of the first portion and connecting said first portion to said annular shoulder, whereby groove isolates said diaphragm from stress from said housing.

8. (currently amended)

A pressure sensor device for producing a signal indicative of a pressure of a fluid to be monitored, comprising:

a housing having a fluid conduit means for receiving the fluid to be monitored;

diaphragm means for responding to said pressure and positioned at an end of the fluid conduit means and including at least first and second portions, wherein a thickness of the first portion is less than a thickness of the second portion; and

transducer means including electronics for sending and processing said signal. said transducer means being bonded to a surface of the first portion of the diaphragm means to measure deformation of said first portion and including piezoresistive elements.

9. (original)

The device of claim 8, wherein said transducer means is a MEMS pressure transducer.

10. (original)

The device of claim 9, wherein said diaphragm means is a stainless steel diaphragm and said MEMS pressure transducer is mounted to said diaphragm by a high temperature bonding process.

11. (original)

The device of claim 8, wherein said housing is cylindrical.

12. (original)

The device of claim 8, wherein said second portion is circular and said first portion is annular around the outer edge of said second portion.

13. (original)

The device of claim 8, wherein said housing is tubular and said first end includes an annular shoulder for mounting said diaphragm means thereon.

14. (original)

The device of claim 13, which further includes an annular groove on the outer surface of the first portion and connecting said first portion to said annular shoulder, whereby groove isolates said diaphragm means from stress from said housing.

15. (currently amended)

In a pressure sensor device for producing a signal indicative of a pressure of a fluid to be monitored, including a housing having a fluid conduit for receiving the fluid to be monitored and a transducer including piezoresistive elements, said transducer including electronics for sending and processing said signal, the improvement comprising:

a diaphragm positioned at an end of the fluid conduit and including at least first and second portions, wherein a thickness of the first portion is less than a thickness of the second portion; and

said transducer being bonded to a surface of the first portion of said diaphragm to measure deformation of said first portion.

16. (original)

The device of claim 15, wherein said transducer means is a MEMS pressure transducer said diaphragm is a stainless steel diaphragm, said MEMS pressure transducer being mounted to said diaphragm by a high temperature bonding process.

17. (original)

The device of claim 15, wherein said housing is cylindrical.

18. (original)

The device of claim 15, wherein said second portion is circular and said first portion is annular around the outer edge of said second portion.

19. (original)

The device of claim 15, wherein said housing is tubular and said first end includes an annular shoulder for mounting said diaphragm means thereon.

20. (original)

The device of claim 19, which further includes an annular groove on the outer surface of the first portion and connecting said first portion to said annular shoulder, whereby groove isolates said diaphragm means from stress from said housing.